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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,898	12/21/2001	Yuji Yoshimoto	217502US2	5325

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EXAMINER

HARTMAN JR, RONALD D

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 08/13/2003

b

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/023,898

Applicant(s)

YOSHIMOTO ET AL.

Examiner

Ronald D Hartman Jr.

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-41 are presented for examination.

Claim Objections

2. Claims 32-33 and 36-37 to because of the following:

Lines 2-3; "said information quantity of a next information", should read, "said information quantity of a next processing". Furthermore, the rest of the wording in these claims is confusing and should be re-worded to more clearly convey the claimed invention. These claim have been interpreted to recite a feature whereby data is stored when there is enough memory available to store it and that data is erased in the same order that it was stored. Also the second use of "erase" in line 2 should be "erases".

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2121

4. Claims 1-41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-51 of copending Application No. 10/114,248. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-41 of the instant application (10/023898) teaches the same features or limitations as claims 1-51 of 10/114,248. Although the claims use different worded limitations to describe their respective inventions, the inventions are the same in that they both are directed and claiming a processing apparatus that is comprised of at least the following:

- a processing apparatus body for executing a process to a target object;
- a control means for controlling the apparatus body; wherein the control means is comprised of two controllers; and
- an information storage means for storing control signals emanating from the control means.

Other features, such as the storing of information that is not transmitted or received by the first controller to the second controller and the transport apparatus (among many others) are all believed to be adequately described in a way (in both sets of claims) that would have been obvious to one of ordinary skill in the art at the time the invention was made.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. As per claims 22-24, the examiner does not understand what exactly is being claimed. These claims are not in condition for examination as they recite fragmented thoughts or ideas, from which the examiner can make no reasonable interpretation. Therefore, since the examiner will not speculate as the intended meanings of claim limitations, these claims will not be further treated on their merits with regards to prior art since no reasonable comparison can be made with what currently appears in these claims with.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. *Claims 1-2, 9-10, 16-17 and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park, U.S Patent No.6, 445,443; having an effective filing date 6/29/2000.*

9. As per claims 1, 9, 16 and 25, Park teaches an apparatus, system and method comprising:

- a processing apparatus body for executing a prescribed process to a target object (Figure 1 element 100 and its corresponding textual descriptions);
- a control mechanism for controlling said processing apparatus body (Figure 1 elements 120 and 150 and their corresponding textual descriptions); and
- an information storage section (data base; C4 L39-44).

10. As per claims 1, 9, 16 and 25, Park does not specifically teach the database utilized for inputting a signal from said control mechanism and storing information included in said signal. However, in light of the teachings of Park, it is viewed to be feature(s) that would have been obvious to one of ordinary skill in the art at the time the invention was made. That is, since Park is directed towards optimizing the manufacturing of semiconductor wafers, and since the use of the database facilitates this goal by providing historical data for use in determining necessary changes to the manufacturing process, a feature whereby the information that is used to control the functions of the semiconductor processing apparatus (lithography system), and the changes they represent to the system and the parameters affected by the changes would obviously be stored in the database in order to further the data compilation to provide a more accurate representation of the wafer history.

Art Unit: 2121

11. As per claims 2, 10 and 17, Park teaches:

- the control mechanism comprising a first and second controller, each of which executes different control of the processing apparatus body (Figure 1 elements 120 and 150 and their corresponding textual descriptions).

12. As per claim 25, an “information process section” for receiving information from the first controller and information from the database, and analyzing this data is taught as the data being received by the second controller; wherein the data starts as input from a user to a database, then the database being used for instructions for the first controller, and the second controller using the outputs from the first controller, in conjunction with data stored in the database, to determine changes to the manufacturing process using the second controller (C4 L39-44 and C5 L7-11).

13. As per claims 27 and 29, Park teaches the use of measurement information (wafer history).

14. As per claim 26, since the use of a computer is at least obvious to the disclosed system of Park for inputting information into the lithography system for controlling the manufacturing of the semiconductor wafer, the use of the computer can be adequately viewed as a “monitor computer” since the inputs affect the manufacturing and since the user would have access to any and all of the data about past wafers through use of

wafer history stored in a database which he/she would then use to determine necessary changes to the process (such as the adjustments of a recipe).

15. As per claim 28, the use of a display for displaying information about the controlling of the manufacturing process would be obvious to one of ordinary skill in the art at the time the invention was made since it would provide a means by which the process can be viewed digitally in a compact easy to use graphical user interface.

16. *Claims 30, 32, 34, 36, 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park, as applied to claims 1, 9 and 16 above, and further in view of Official Notice.*

As per claims 30, 32, 34, 36, 38 and 40, Official Notice is taken with respect to database management techniques that use FIFO (first in first out) methods of data replacement for use in control systems. This method allows for the oldest data to be removed, and when data collection is used over large periods of time, very old data may not be needed, and therefore it would obviously be the first choice for deletion.

Furthermore, Official Notice is also taken with respect to a database management feature whereby the amount of space available is detected before the storing of the next information (data represented by the next processing step during the manufacturing of the semiconductor wafer). This feature provides an obvious benefit to databases since the storing of non-complete data (for instance: if a data packet of size 10 was stored in

Art Unit: 2121

a space of size 9) would not provide the system with accurate information about the processing of the wafer, and would have the reverse effect of optimizing the manufacturing of the wafer. Since this is clearly not the intent of Park, and since both of these features with regards to claims 30, 32, 34, 36, 38 and 40 are features that are well known in the art of database management, their incorporation would have been obvious to one of ordinary skill in the art at the time the invention was made since they would allow for more effective data management, thereby realizing the desires of Park to form an optimized way of controlling the manufacturer of wafers using wafer histories.

17. *Claims 3-4, 11-12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (6,445,443) in view of Goder et al., U.S Patent No. 6,424,880; having an effective filing date of 9/10/1999.*

As per claims 3, 11 and 18, Park teaches an apparatus, system and method comprising:

- a processing apparatus body for executing a prescribed process to a target object (Figure 1 element 100 and its corresponding textual descriptions);
- a control mechanism, including a first and second controller, for executing different control of said processing apparatus body (Figure 1 elements 120 and 150 and their corresponding textual descriptions); and
- an information storage section (data base; C4 L39-44).

Art Unit: 2121

18. As per claims 3, 11 and 18, Park does not specifically teach the communications of the first controller with the second, and vice versa.

Goder teaches a system for manufacturing system for processing wafers whereby two separate processors (controllers) may be used for controlling the overall operations of the system. Goder further teaches that these processors possess the ability to communicate with one another in order to further the optimization of the wafer processing steps (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Goder into Park since they are from analogous art and both aim to optimize wafer processing by utilizing more than one controller. Therefore, since communication back and forth from the controllers would allow for necessary changes to be implemented even faster since the system could implement a change to the very next wafer to be processed, this cross communication would be a feature that would obviously improve the effectiveness of using more than one controller to control the processing of the wafer.

Furthermore, as per claims 3, 11 and 18, Park does not specifically teach the database utilized for inputting a signal from said control mechanism and storing information included in said signal. However, in light of the teachings of Park in view of Goder, it is viewed to be feature(s) that would have been obvious to one of ordinary skill in the art at the time the invention was made. That is, since Park is directed towards optimizing the manufacturing of semiconductor wafers, and since the use of the database facilitates this goal by providing historical data for use in determining

Art Unit: 2121

necessary changes to the manufacturing process, a feature whereby the information that is used to control the functions of the semiconductor processing apparatus (lithography system), and the changes they represent to the system and the parameters affected by the changes would obviously be stored in the database in order to further the data compilation to provide a more accurate representation of the wafer history. Therefore, for at least the same reasons, signals that are sent from one controller to the other (which include instructions or commands for changing aspects of the system) would also be stored in the database since this data is representative of the wafer history, and the more accurate the wafer, the more optimized the system can controllably become.

19. As per claims 4, 12 and 19, Park teaches user inputs to the lithography apparatus, and these would obviously take place through utilization of a host computer. Since the host computer forms a means by which information may be input to the database, it is viewed as information that is "not transmitted and received by the first and second controllers". Furthermore, a "detection section" for detecting the information "not transmitted and received by the first and second controllers" (information inputted by a user using the host computer) is inherent to the use of the computer itself. Therefore, since the use of the computer for inputting wafer history information would form a simple way of adding new information to the wafer history, and since this would form a more effective optimization system by allowing for changes to be implemented whenever the user deems necessary, its incorporation into Park would have been

Art Unit: 2121

obvious to one of ordinary skill in the art at the time the invention was made and therefore, for at least the same reasons, the use of a detection section would be obvious as well, since it is inherent to the use of the computer, which has been deemed to be an obvious variation or implementation of Park.

20. *Claims 31, 33, 35, 37, 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park, as applied to claims 3, 11 and 18 above, and further in view of Official Notice.*

As per claims 31, 33, 35, 37, 39 and 41, Official Notice is taken with respect to database management techniques that use FIFO (first in first out) methods of data replacement for use in control systems. This method allows for the oldest data to be removed, and when data collection is used over large periods of time, very old data may not be needed, and therefore it would obviously be the first choice for deletion. Furthermore, Official Notice is also taken with respect to a database management feature whereby the amount of space available is detected before the storing of the next information (data represented by the next processing step during the manufacturing of the semiconductor wafer). This feature provides an obvious benefit to databases since the storing of non-complete data (for instance: if a data packet of size 10 was stored in a space of size 9) would not provide the system with accurate information about the processing of the wafer, and would have the reverse effect of optimizing the manufacturing of the wafer. Since this is clearly not the intent of Park, and since both of these features with regards to claims 31, 33, 35, 37, 39 and 41 are features that are well

Art Unit: 2121

known in the art of database management, their incorporation would have been obvious to one of ordinary skill in the art at the time the invention was made since they would allow for more effective data management, thereby realizing the desires of Park to form an optimized way of controlling the manufacturer of wafers using wafer histories.

21. *Claims 5-8, 13-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (6,445,443), in view of Goder (6,424,880).*

As per claims 5, 13 and 20, Park teaches a system, apparatus and method comprising:

- a processing apparatus body for executing a prescribed process to a target object (Figure 1 element 100 and its corresponding textual descriptions) and a transport apparatus (Figure 1 element 115 and its corresponding textual descriptions);
- a first controller for controlling said processing apparatus as a whole (taught as the use of use inputs, which would obvious take place through a computer, into the lithography system. These input signals contain information related to the controlling of parameters of the manufacturing system (such as changes to a recipe) and therefore affect the overall operations of the apparatus);
- a second controller for controlling a plurality of process units (taught as the first controller controlling elements 111-115, which represent the processing units of the lithography system); and

- an information storage section (data base; C4 L39-44).

22. As per claims 5, 13 and 20, Park does not specifically teach the communications of the first controller with the second, and vice versa.

Goder teaches a system for manufacturing system for processing wafers whereby two separate processors (controllers) may be used for controlling the overall operations of the system and that these controllers may be directed through use of another computer (Figure 4 element 402). Goder further teaches that these processors possess the ability to communicate with one another in order to further the optimization of the wafer processing steps (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Goder into Park since they are from analogous art and both aim to optimize wafer processing by utilizing more than one controller. Therefore, since communication back and forth from the controllers would allow for necessary changes to be implemented even faster since the system could implement a change to the very next wafer to be processed, this cross communication would be a feature that would obviously improve the effectiveness of using more than one controller to control the processing of the wafer.

Furthermore, as per claims 5, 13 and 20, Park does not specifically teach the database utilized for inputting a signal from said control mechanism and storing information included in said signal. However, in light of the teachings of Park in view of Goder, it is viewed to be feature(s) that would have been obvious to one of ordinary skill in the art at the time the invention was made. That is, since Park is directed towards

Art Unit: 2121

optimizing the manufacturing of semiconductor wafers, and since the use of the database facilitates this goal by providing historical data for use in determining necessary changes to the manufacturing process, a feature whereby the information that is used to control the functions of the semiconductor processing apparatus (lithography system), and the changes they represent to the system and the parameters affected by the changes would obviously be stored in the database in order to further the data compilation to provide a more accurate representation of the wafer history. Therefore, for at least the same reasons, signals that are sent from one controller to the other (which include instructions or commands for changing aspects of the system) would also be stored in the database since this data is representative of the wafer history, and the more accurate the wafer, the more optimized the system can controllably become.

23. As per claims 6, 14 and 21, Park teaches user inputs to the lithography apparatus, and these would obviously take place through utilization of a host computer. Since the host computer forms a means by which information may be input to the database, it is viewed as information that is "not transmitted and received by the first and second controllers". Furthermore, a "detection section" for detecting the information "not transmitted and received by the first and second controllers" (information inputted by a user using the host computer) is inherent to the use of the computer itself. Therefore, since the use of the computer for inputting wafer history information would form a simple way of adding new information to the wafer history, and since this would

Art Unit: 2121

form a more effective optimization system by allowing for changes to be implemented whenever the user deems necessary, its incorporation into Park would have been obvious to one of ordinary skill in the art at the time the invention was made and therefore, for at least the same reasons, the use of a detection section would be obvious as well, since it is inherent to the use of the computer, which has been deemed to be an obvious variation or implementation of Park.

24. As per claim 7, an “information process section” for receiving information from the first controller and information from the database, and analyzing this data is taught as the data being received by the second controller; wherein the data starts as input from a user to a database, then the database being used for instructions for the first controller, and the second controller using the outputs from the first controller, in conjunction with data stored in the database, to determine changes to the manufacturing process using the second controller (C4 L39-44 and C5 L7-11).

25. As per claims 8 and 15, Park teaches the use of measurement information (wafer history).

Information Disclosure Statement

26. Applicant's IDS, paper #5, could not be located. Therefore, none of the references that were cited in this submission have been considered.

Art Unit: 2121

Conclusion

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald D. Hartman Jr. whose telephone number is (703) 308-7001. The examiner can normally be reached Monday-Friday, 11:30 am – 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached at (703) 305-0282. The fax number for this examiner is (703) 746-5408.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9618.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 746-7239, (for formal communications intended for entry)

Or:

(703) 746-7240, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Ronald D. Hartman Jr.
Patent Examiner
Art Unit 2121
August 9, 2003

Ramesh Patel 8/10/03
RAMESH PATEL
PRIMARY EXAMINER
For Anil Khatri